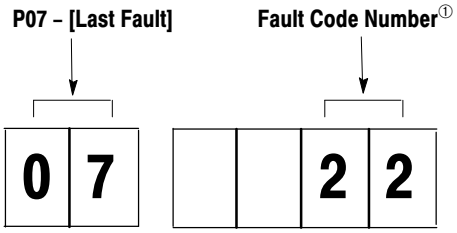
Fault Information

Figure 6.1 – Fault Display



① See Table 6.A below for fault descriptions.

Controllers equipped with a program keypad module will flash the display when a fault is present. If a fault occurs, parameter **07 – [Last Fault]** displays. You can cross reference the number that appears on the display **(e.g., 22)** with the fault numbers listed in Table 6.A.

Fault LED – (Without Program Keypad Module)

Controllers without a program keypad module come equipped with a fault LED. When the fault LED illuminates, a fault condition exists.

Tips To Clear a Fault

IMPORTANT: If a fault occurs, it is important to address and correct the fault as well as the condition that caused the fault.

To clear a fault, perform one of the following:

- Press the program keypad's stop button.
- Cycle power to the controller.
- Cycle the TB3 stop input signal to the controller.
- Set **P54 – [Clear Fault]** parameter to a "1".

Table 6.A Bulletin 160 Fault Descriptions

Fault Number	Fault Indication	Fault Description	Corrective Action
03	Power Loss Fault	DC Bus voltage remains below 85% nominal on power up for longer than 5 seconds.	Monitor incoming AC line for low voltage or line power interruption.
04	Under Voltage Fault	DC Bus voltage fell below the minimum. For controllers rated at input voltage 200–240 VAC, undervoltage trip occurs at 210 VDC bus voltage (equivalent to 150 VAC incoming line voltage). For controllers rated at input voltage 380–460 VAC, undervoltage trip occurs at 390 VDC bus voltage (equivalent to 275 VAC incoming line voltage).	Monitor incoming AC line for low voltage or line power interruption.
05	Over Voltage Fault	DC Bus maximum voltage exceeded. For controllers rated at input voltage 200–240 VAC, overvoltage trip occurs at 410 VDC bus voltage (equivalent to 290 VAC incoming line voltage). For controllers rated at input voltage 380–460 VAC, overvoltage trip occurs at 815 VDC bus voltage (equivalent to 575 VAC incoming line voltage).	Bus overvoltage caused by motor regeneration. Monitor incoming AC line for excessive voltage. Extend the decel time or install dynamic brake module or external capacitor module. See Appendix A.

Table 6.A Bulletin 160 Fault Descriptions (continued)

Fault Number	Fault Indication	Fault Description	Corrective Action
06	Motor Stall Fault	Motor has stalled. Motor load is excessive.	Longer acceleration time or a reduced load required.
07	Motor Overload Fault	Internal electronic overload trip. Excessive motor load exists.	Reduce motor load until controller output current does not exceed the current set by **P42 – [Motor Overload Current]**. Reduce **P38 – [Boost Volts]**.
08	Over Temperature Fault	Excessive heat detected.	Clear blocked or dirty heat sink fins. Check ambient temperature. Check for blocked or non–operating fan.
12	Overcurrent Fault	Overcurrent detected in hardware trip circuit.	Check short circuit at the controller output or excessive load conditions at the motor.
22	Controller Reset Fault	Stop input not present.	Check stop connection at TB3, terminal 8.
32	EEPROM Fault	EEPROM has invalid data.	Reset EEPROM using **P56 – [Reset Defaults]**.
33	Max Retries Fault	Controller failed to reset fault within the number of retries set in **P50 – [Restart Tries]**.	Repair system fault.
38	Phase U Fault	Phase to ground fault detected between controller and motor in phase U.	Check the wiring between the controller and motor. Check motor for grounded phase.
39	Phase V Fault	Phase to ground fault detected between controller and motor in phase V.	Check the wiring between the controller and motor. Check motor for grounded phase.
40	Phase W Fault	Phase to ground fault detected between controller and motor in phase W.	Check the wiring between the controller and motor. Check motor for grounded phase.
41	UV Short Fault	Excessive current has been detected between these two controller output terminals.	Check the motor and external wiring to the controller output terminals for a shorted condition.
42	UW Short Fault	Excessive current has been detected between these two controller output terminals.	Check the motor and external wiring to the controller output terminals for a shorted condition.
43	VW Short Fault	Excessive current has been detected between these two controller output terminals.	Check the motor and external wiring to the controller output terminals for a shorted condition.
46	Power Test Fault	Fault detected during initial start-up sequence.	Check controller wiring. Check motor wiring.
48	Reprogram Fault	Occurs when controller parameters are reset to defaults.	Clear fault.

Table 6.B Troubleshooting

Problem	Corrective Action
Motor does not start (No output voltage to motor).	1. Check power circuit. • Check supply voltage. • Check all fuses and disconnects. 2. Check motor. • Verify that motor is connected properly. 3. Check control input signals. • Verify that START signal is present. • Verify that STOP signal is present. • Verify that RUN FORWARD and RUN REVERSE signals are NOT both active. 4. Check **P46 – [Input Mode Select**]. • If **P46 – [Input Mode Select]** is set to "2", only the program keypad module **Start** button will start the motor.
Controller Started but motor NOT rotating. (**P01 – [Output Frequency]** displays "0.0").	1. Check motor. • Verify that motor is connected properly. 2. Check frequency source **P06 – [Frequency Command]**. • Verify that frequency signal is present at terminal block TB3. –10- +10V signal 4–20 mA signal • Verify that Preset Frequencies are set properly. 3. Check control input signals. • Verify that SW1, SW2 and SW3 are correct. (Refer to the chart at the end of Chapter 5). 4. Check parameter settings. • Verify that **P59 – [Freq Select]** is showing desired frequency source. • Verify that **P58 – [Internal Frequency**] is the desired value.
Motor not accelerating properly.	1. Check motor. • Verify that motor is connected properly. • Verify that no mechanical problems exist. 2. Check parameter settings. • Verify that **P30 – [Accel Time 1]** or **P69 – [Accel Time 2]** is set properly. • Verify that **P43 – [Current Limit]** is set properly. • Verify that **P38 – [Boost Volts]** is set properly.
Can not operate in "RUN FWD/ RUN REV" mode.	1. Verify that **P46 – [Input Mode Select]** is set to "1". 2. Verify that power has been cycled for above change to take effect. 3. Verify that both RUN FORWARD and RUN REVERSE switches are NOT closed simultaneously.

Block Diagram of Bulletin 160 Analog Signal Follower